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BY: Parrela Wright

DATE: October 3, 2002

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re:	Patent Application of Schepartz, <i>et al.</i>	: Group Art Unit 1631
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		:
Appln. No:	09/840,085	: Examiner: C. Mahatan
		:
Filed:	April 24, 2001	:
		: Attorney Docket
Title:	DNA AND PROTEIN BINDING MINIATURE PROTEINS	: No. 044574-5099-US
		: (OCR 976)

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**RESPONSE TO RESTRICTION REQUIREMENT**

This response is being timely filed in view of the accompanying Petition for a three month extension of time and associated fee therefor, which extends the time for a response to the Restriction Requirement through and to November 2, 2002.

**Election of invention**

Responsive to the Restriction Requirement dated July 2, 2002 (Paper No. 8), issued in connection with the above-identified application, Applicants elect to prosecute Group I, claims 1-13 and 19, drawn to polypeptides.

This election is being made without traverse and without prejudice to the inclusion of the subject matter of the non-elected claims in any later filed divisional or continuation application.

**Species election requiring election of a single amino acid sequence**

At page 3 of the Office Action, the Examiner has requested that Applicants elect a single nucleic or amino acid sequence to be examined such that a group drawn to amino acid sequences requires that a single amino acid sequence be elected. Applicants hereby elect the

sequence of SEQ ID NO:23 (*i.e.*, 4100) for examination, without prejudice to the inclusion of the subject matter of the non-elected species in any later filed divisional or continuation application. Further, for the reasons set forth more fully below, Applicants traverse this requirement.

Species election requiring election of species (A) or (B) if Group I or II is elected

The Examiner (at page 5 of the Office Action) has requested that if election is made to the claims of Group I or Group II, then a species election must be made to “(A) basic region leucine zipper structures (GCN4, CEBP, Max, Myc, and MyoD), claim 7 (B) basic-helix-loop-helix structures (double minute two, Bcl-2, protein kinase A, Jun, and Fos), claim 12.”

Applicants, in a good faith effort to expedite prosecution of this application, hereby elect, with traverse, species (B), insofar as it encompasses Bcl-2 and double minute 2, without prejudice to the inclusion of the subject matter of the non-elected species in any later filed divisional or continuation application. Furthermore, Applicants hereby traverse this requirement as follows.

Traversal of species elections

Preliminarily, Applicants respectfully note that the species requirement requiring election of species (A) or (B), as these species are set forth at page 5 of the Restriction Requirement, is at odds with the disclosure provided in the specification as filed. That is, the specification discloses that there are DNA-binding miniature proteins (specification at page 9, line 9, to page 11, line 23). Such proteins can encompass those comprising a basic region leucine zipper structure (bZIP) as exemplified by, among other proteins, GCN4 and C/EBP-delta (specification at page 10, lines 4-5). Additionally, the specification discloses that DNA-binding miniature proteins also encompass those comprising a basic-helix-loop-helix structure (bHLH), such as, but not limited to, Max, Myc, and MyoD (specification at page 10, lines 5-7). The specification further discloses that DNA-binding miniature proteins also encompasses those proteins comprising a homeodomain structure, such as, among others, that found in the Q50 engrailed variant protein (specification at page 10, lines 7-9). Thus, the specification as filed makes clear that, generally, DNA-binding miniature proteins can comprise three (3) structures: bZIP, bHLH, and homeodomain structures.

Further, the specification teaches that the invention also encompasses protein-binding miniature proteins (specification at page 13, line 30, to page 15, line 25). The protein-binding miniature proteins encompass, and are exemplified by, among others, helical structures such as those involved in protein-protein interactions between Jun and Fos; the interaction between Bcl-2 and Bak; the interaction between CBP-KIX and CREB-KID; and the interaction between p53 and double minute two (DM2) (specification at page 14, lines 14-18). The specification also points out that these interactions can involve coiled coil protein structures and/or leucine zippers (specification at page 14, lines 19-20).

Apparently, the Examiner has conflated these various groups and has combined all DNA-binding miniature proteins, comprising both bZIP and bHLH structures, into species (A) considering them all "bZIP", and has placed all of the protein-binding miniature proteins in species (B) considering them all "bHLH" proteins.

Applicants respectfully submit that the two species groups should reflect that group (A) are DNA-binding miniature proteins, regardless of whether they comprise bZIP or bHLH structures, and that group (B) are protein-binding miniature proteins, all as disclosed in the specification as filed. Thus, with the understanding that species (B) are protein-binding miniature proteins (comprising DM2, Bcl-2, protein kinase A, Jun and Fos, as noted by the Examiner), Applicants have elected this species for examination.

With regard to election of a single amino acid sequence for examination, Applicants respectfully submit that in performing a patentability search for a modified protein where the known protein is selected from, *inter alia*, a Bcl-2 protein, as exemplified by SEQ ID NOs:23-30, and in the context of the claims elected herein, the Examiner will necessarily uncover art pertaining to any such amino acid sequence, if such art exists. That is, Applicants submit that the amino acid sequences of SEQ ID NOs:23-30, which are depicted at Figure 4 of the specification as filed, are sufficiently similar such that a search of the pertinent art for any one of these sequences should uncover art, if any such art exists, disclosing any and all such sequences, as well as sequences sharing homology therewith. Indeed, the amino acid sequence of SEQ ID NO:30 (Phe-Val-Xaa-Arg-Leu-Leu-Xaa-Asp-Xaa-Ile-Asn-Arg) is a consensus sequence encompassing the other seven (7) sequences.

Therefore, since a search of any one of the amino acid sequences of SEQ ID NOs:23-30, relating to Bcl-2, in the context of the present claims, would necessarily reveal art, if

such art exists, regarding the other sequences, no undue burden is placed upon the Examiner to search for all eight (8) amino acid sequences at this time.

Accordingly, Applicants respectfully request withdrawal of the election of the species requirement requiring election of a single amino acid sequence and request that the sequences relating to Bcl-2, *e.g.*, SEQ ID NOs:23-30, be examined.

Objection to Drawings

Enclosed herewith are six (6) sheets of formal drawings, designated as Figures 1 through 6, corresponding to the above-identified application. It is respectfully submitted that the enclosed formal drawings are in acceptable form. These formal drawings merely replace the original drawings filed in this application, and no new matter has been added by way of submission of these drawings.

In conclusion, early consideration and allowance of the claims in the present application is earnestly requested.

Respectfully submitted,

**SCHEPARTZ ET AL.**

October 3, 2002  
(Date)

By:

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Enclosures: Petition for 3-month extension of time and fee; six (6) drawings and copy thereof